MICROBIOLOGICAL PROFILE OF PERITONEAL DIALYSIS FLUID IN ACUTE AND CHRONIC RENAL FAILURE PATIENTS IN A TERTIARY CARE HOSPITAL

ABSTRACT

INTRODUCTION:

Peritoneal Dialysis is an effective mode of therapy for Acute and Chronic Renal Failure patients. Peritonitis is the major complication of Peritoneal Dialysis and it remains a cause of hospitalisation, Catheter removal, discontinuation of peritoneal dialysis and switch over to hemodialysis. Mortality rates varying from 2 to 25% in bacterial peritonitis and 5% to 53% in Fungal peritonitis.

Aim of this study is to identify the microbiological profile of Peritoneal Dialysis fluid in Acute & Chronic Renal Failure patients in a Tertiary care hospital.

Materials and methods:

100 dialysate samples were collected from patients who were admitted for Peritoneal Dialysis in RGGGH, Chennai during the period of one year. 5 ml of dialysate was examined by direct microscopy for cell count analysis. 25 ml of Dialysate was aspirated and centrifuged at 1500g for 5 minutes. Then the supernatant discarded &0.5 ml deposit was taken. 10 ml sterile distilled water was added to the centrifuged deposit & mixed by vigorous shaking for 30s. Again the fluid was centrifuged at 1500g for 5 mins. The deposit was used for preparation of Potassium hydroxide [KOH mount] mount,

Gram's staining and for aerobic bacterial and fungal culture. The sediment was plated on 5% Sheep blood agar, Chocolate agar, MacConkey agar and incubated at 37°C for 24-48 hours. Chocolate agar plates were incubated in candle jar at 37°C.The sediment was also inoculated in Brain Heart Infusion broth and incubated at 37°C .BHI broth was monitored for 1 week for turbidity and subculture was done. The effluent was streaked on two Sabouraud's Dextrose agar media and incubated at 25°C and 37°C for four weeks and examined periodically for growth. Antimicrobial susceptibility testing was done by Kirby Bauer Disc Diffusion method on Mueller Hinton agar according to CLSI guidelines.

RESULTS:

Culture positive was observed in 28%. Among them 46.4% were Gram negative, 35.7% Gram positive and 17.9% Fungal isolates.89.3% of isolates were from Intermittent Peritoneal Dialysis. Only 10.7% from CAPD. Among culture positive patients 35.7% of them had symptoms of peritoneal infection and 64.2% had no symptoms. 57% of the patients had culture positive with cell count ≥100/µl and 15% of patients had cell count ≥100/µl but culture was negative. *Candida non albicans(20%)* was the predominant fungal pathogen. *Klebsiella pneumoniae, Pseudomonas aeruginosa, Escherichia coli each 33.3%* were isolated in CAPD patients. ESBL production was seen in 50% of *Klebsiella pneumoniae*. *Acinetobacter baumannii* constitute 20% among IPD patients. MBL production was observed in 100% of *Pseudomonas aeruginosa* and 20% of *Acinetobacter baumannii*. Methicillin reistance was found in 25% of *Staphylococcus aureus* and *Coagulase negative Staphylococcus*. All are sensitive to Vancomycin.

CONCLUSION:

As Peritoneal dialysis associated infections are being increased, routine PD fluid microbiological analysis after the completion of the procedure will be useful to improve patient care by using appropriate antibiotic at the earliest before any significant clinical problem occurs.

Keywords: Peritoneal Dialysis associated Peritonitis, Continuous Ambulatory Peritoneal Dialysis, Intermittent Peritoneal Dialysis, Bacterial and Fungal peritonitis.